

CLAIMS:

1. A method of treating a patient with an acute myocardial infarction comprising:
administering to the patient an effective amount of a formulation comprising an encapsulated agent, wherein the formulation reduces a zone of infarct, thereby minimizing the damage following the acute myocardial infarction.
2. A method of treating a patient with an acute myocardial infarction comprising:
administering to the patient an effective amount of a formulation comprising an embedded agent, wherein the formulation reduces a zone of infarct, thereby minimizing the damage following the acute myocardial infarction.
3. A method of treating a patient with an acute myocardial infarction comprising:
administering to the patient an effective amount of a formulation comprising a particulate agent, wherein the formulation reduces a zone of infarct, thereby minimizing the damage following the acute myocardial infarction.
4. The method as in one of claims 1-3, wherein the formulation inhibits blood monocytes or tissue macrophages.
5. The method as in one of claims 1-3, wherein the formulation depletes blood monocytes or tissue macrophages .
6. The method as in one of claims 1-3, wherein the formulation has a size range of 0.1-1.0 microns.
7. The method as in one of claims 1-3, wherein the formulation has a size range of 0.1-0.5 microns.
8. The method as in one of claims 1-3, wherein the formulation has a size range of 0.1-0.3 microns.

9. The method as in one of claims 1-3, wherein the formulation has a size range of 0.1-0.18 microns.
10. The method as in one of claims 1-3, wherein the agent is an intra-cellular inhibitor.
11. The method as in one of claims 1-3, wherein the agent is an intra-cellular deactivator.
12. The method as in one of claims 1-3, wherein the agent is an intra-cellular arrestor.
13. The method as in one of claims 1-3, wherein the agent is an intra-cellular toxin.
14. The method as in one of claims 1-3, wherein the agent is a cytostatic substance.
15. The method as in one of claims 1-3, wherein the agent is a cytotoxic substance.
16. The method as in one of claims 1-3, wherein the formulation can primarily enter a cell via phagocytosis.
17. The method as in one of claims 1-3, wherein the agent is a bisphosphonate.
18. The method as in one of claims 1-3, wherein the agent is gallium.
19. The method according to claim 17, wherein the bisphosphonate is selected from the group consisting of clodronate, etidronate, tiludronate, pamidronate, alendronate and risendronate.
20. The method according to claim 1, wherein the agent is encapsulated in a liposome.

21. The method according to claim 2, wherein the agent is embedded in a carrier selected from the group consisting of microparticles, nanoparticles, microspheres, and nanospheres.

22. The method according to claim 3, wherein the particulates are selected from the group consisting of aggregates, flocculates, colloids, polymer chains, insoluble salts and insoluble complexes.

23. The method according to claim 4, wherein inhibition of said monocytes or macrophages occurs through phagocytosis of the formulation.

24. The method according to claim 5, wherein depletion of said monocytes or macrophages occurs through phagocytosis of the formulation.

25. A method of treating an acute myocardial infarction followed by myocardial necrosis comprising:

administering to an individual in need thereof an effective amount of a formulation comprising an encapsulated bisphosphonate, thereby minimizing damage resulting from the myocardial necrosis.

26. The method according to claim 25, wherein the bisphosphonate is encapsulated in a liposome.

27. A method of treating an acute myocardial infarction followed by myocardial necrosis comprising:

administering to an individual in need thereof an effective amount of a formulation comprising an embedded bisphosphonate, thereby minimizing damage resulting from the myocardial necrosis.

28. The method according to claim 27, wherein the bisphosphonate is embedded in a carrier selected from the group consisting of microparticles, nanoparticles, microspheres, and nanospheres.

29. A method of treating an acute myocardial infarction followed by myocardial necrosis comprising:

administering to an individual in need thereof an effective amount of a formulation comprising a particulate bisphosphonate, thereby minimizing damage resulting from the myocardial necrosis.

30. The method according to claim 29, wherein the particulates are selected from the group consisting of aggregates, flocculates, colloids, polymer chains, insoluble salts and insoluble complexes.

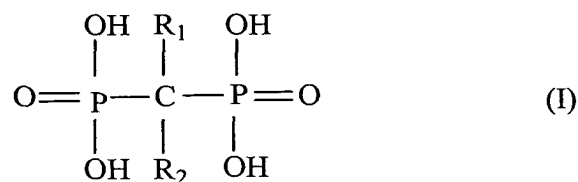
31. The method according to claims 25, 27 or 29, wherein the formulation inhibits blood monocytes or tissue macrophages.

32. The method according to claims 25, 27 or 29, wherein the formulation depletes blood monocytes or tissue macrophages.

33. The method according to claim 31, wherein inhibition of said monocytes or macrophages occurs through phagocytosis of the formulation.

34. The method according to claim 32, wherein depletion of said monocytes or macrophages occurs through phagocytosis of the formulation.

35. The method according to claims 1, 2 or 3, wherein said agent has formula (I):



wherein R_1 is H, OH or halogen group; and

R_2 is halogen; linear or branched $\text{C}_1\text{-C}_{10}$ alkyl or $\text{C}_2\text{-C}_{10}$ alkenyl, optionally substituted by heteroaryl or heterocyclyl $\text{C}_1\text{-C}_{10}$ alkylamino or $\text{C}_3\text{-C}_8$ cycloalkylamino, where the amino may be a primary, secondary or tertiary amine; -NHY where Y is hydrogen, $\text{C}_3\text{-C}_8$ cycloalkyl, aryl or heteroaryl; or -SZ , where Z is chlorosubstituted phenyl or pyridinyl.

36. The method according to claim 1, 2, 3, 25, 27 or 29, wherein the formulation is administered following an acute myocardial infarction.

37. The method according to claim 1, 2, 3, 25, 27 or 29, wherein the formulation is administered during an acute myocardial infarction.

38. The method according to claim 1, 2, 3, 25, 27 or 29, wherein the formulation is administered prior to the anticipated onset of acute myocardial infarction.

39. The method according to claim 1, 2, 3, 25, 27 or 29 wherein the formulation is administered during reperfusion.

40. The method according to claim 1, 2, 3, 25, 27 or 29 wherein the formulation is administered prior to or during a procedure where an acute myocardial infarction is probable.

41. The method according to claim 40, wherein the procedure is a percutaneous transluminal coronary angioplasty.

42. A pharmaceutical composition for the treatment of patients with an acute myocardial infarction, comprising a formulation selected from the group consisting of an encapsulated agent, an embedded agent and a particulate agent, together with a pharmaceutically acceptable carrier, wherein the formulation inhibits blood monocytes or tissue macrophages.

43. The pharmaceutical composition according to claim 42, wherein the formulation is together with a diluent.

44. The pharmaceutical composition according to claim 42, wherein the formulation is together with a stabilizer.

45. The pharmaceutical composition according to claim 42, wherein the agent is an intra-cellular inhibitor.

46. The pharmaceutical composition according to claim 42, wherein the agent is an intra-cellular deactivator.

47. The pharmaceutical composition according to claim 42, wherein the agent is an intra-cellular arrestor.

48. The pharmaceutical composition according to claim 42, wherein the agent is an intra-cellular toxin.

49. The pharmaceutical composition according to claim 42, wherein the agent is a cytostatic substance.

50. The pharmaceutical composition according to claim 42, wherein the agent is a cytotoxic substance.

51. The pharmaceutical composition according to claim 42, wherein the agent is a bisphosphonate.

52. The pharmaceutical composition according to claim 42, wherein the agent is encapsulated in a liposome.

53. The pharmaceutical composition according to claim 42, wherein the agent is embedded in a carrier selected from the group consisting of microparticles, nanoparticles, microspheres, and nanospheres.

54. The pharmaceutical composition according to claim 42, wherein the particulates are selected from the group consisting of aggregates, flocculates, colloids, polymer chains, insoluble salts and insoluble complexes.

55. The pharmaceutical composition according to claim 42, in a dosage form suitable for intravenous, intra-arterial, intramuscular or subcutaneous administration.

56. The pharmaceutical composition according to claim 51, wherein said bisphosphonate is selected from the group consisting of clodronate, etidronate, tiludronate, pamidronate, alendronate, and risendronate.

57. The pharmaceutical composition according to claim 42, in a unit dosage amount effective for the treatment of acute myocardial infarction.

58. The pharmaceutical composition according to claim 42, wherein the composition is administered following an acute myocardial infarction.

59. The pharmaceutical composition according to claim 42, wherein the composition is administered during an acute myocardial infarction.

60. The pharmaceutical composition according to claim 42, wherein the composition is administered prior to the onset of an acute myocardial infarction.

61. The pharmaceutical composition according to claim 42, wherein the composition is administered during reperfusion.

62. The pharmaceutical composition according to claim 42, wherein the composition is administered prior to or during a procedure where an acute myocardial infarction is probable.

63. The pharmaceutical composition according to claim 62, wherein the procedure is a percutaneous transluminal coronary angioplasty.

64. A method of reducing the zone of infarct following acute myocardial infarction comprising:

administering to an individual in need thereof an effective amount of a formulation comprising an encapsulated bisphosphonate.

65. The method according to claim 64, wherein the bisphosphonate is encapsulated in a liposome.

66. A method of reducing the zone of infarct following acute myocardial infarction comprising:

administering to an individual in need thereof an effective amount of a formulation comprising an embedded bisphosphonate.

67. The method according to claim 66, wherein the bisphosphonate is embedded in a carrier selected from the group consisting of microparticles, nanoparticles, microspheres, and nanospheres.

68. A method of reducing the zone of infarct following acute myocardial infarction comprising:

administering to an individual in need thereof an effective amount of a formulation comprising a particulate bisphosphonate.

69. The method according to claim 68, wherein the particulates are selected from the group consisting of aggregates, flocculates, colloids, polymer chains, insoluble salts and insoluble complexes.